1. (Amended) A twin disk refiner comprising:

a housing having portions defining a stock inlet and portions defining a stock outlet, wherein flow of stock from the stock inlet to the stock outlet defines a downstream direction from the inlet to the outlet and defining an upstream direction from the outlet to the inlet [from the stock inlet];

a shaft which extends into the housing and which supports a rotor for rotation within the housing, and wherein a first rotating disk and a second rotating disk [oppositely facing refining disks] are mounted on the rotor so that the first rotating disk faces a direction opposite a direction faced by the second rotating disk;

portions of the housing which define a first plate support structure through which the shaft extends;

a first fixed refiner disk mounted to the first plate support structure;

a second fixed refiner disk mounted to a second plate support structure;

a refining chamber defined within the housing between the first plate support structure and the second plate support structure, wherein the rotor is positioned within the refining chamber so that rotation of the rotor moves the [oppositely facing rotor desks] first rotating disk and the second rotating disk about the shaft in refining relation to the first fixed refining disk and the second refining disk; and

portions of the housing upstream of the refining chamber which define an upstream chamber in communication with the inlet, wherein the first plate support structure has an upstream face which is exposed to and substantially surrounded by the upstream chamber, such that fluid introduced into the housing at the inlet flows through the upstream chamber and then into the refining chamber, such that the first plate support structure is exposed to fluid pressure on its upstream face which counters the fluid pressure applied to the first fixed refiner disk within the refining chamber.

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2. (Amended) A disk refiner comprising:

a machine frame;

a shaft mounted for rotation on the machine frame and extending through a bulkhead into a refiner housing, a portion of the shaft extending into the refiner housing forming a spline;

a first non-rotating refiner disk mounted to a stationary support structure forming part of the refiner housing;

a second non-rotating refiner disk mounted on a sliding head in spaced parallel relation to the first non-rotating refiner disk for sliding motion towards the first non-rotating refiner disk;

a rotor having a central hub, the hub slidably mounting the rotor on the portion of the shaft forming the spline, the rotor supporting a third refiner disk in spaced parallel refining relation with the first refining disk, and a fourth refining disk in spaced parallel refining relation to the second refining disk, the shaft transmitting rotating motion through the spline to the rotor;

a stock inlet leading to a portion of the housing forming a circular flow path formed between an inner shell and an outer shell, the inner shell separating the circular flow path from the rotor, the circular flow path for inducing stock to rotate about the shaft, the stock inlet being positioned so that stock flowing from the inlet to the portion of the housing forming the circular flow path results in [gravity and] centrifugal acceleration [moves] moving heavy weight tramp towards the outer shell;

an outlet for heavy weight tramp located approximately at [near] a lowermost portion of the outer shell;

a portion of the inner housing forming an opening [at least one opening] through the inner shell [forming a means by which] so that rotational motion of stock is preserved as the stock flows towards the rotor.

3. (Amended) The refiner of Claim 1 wherein the stationary support structure forming part of the refiner housing is also part of the portion of the housing forming the circular flow path [forms part of the circular flow path] so that [hydraulic pressure due to] the stock [is presented to] substantially surrounds [all sides of] the stationary support structure.

4. A pulp disk refiner comprising:

a machine frame on which a shaft is mounted for rotation, the shaft having a first end and a second opposite end having portions forming a spline [being connected at a first end to a drive motor, and]

a refiner housing having a circular bulkhead wherein [a] the second end of the shaft passes into [a] the refiner housing through [a] the circular bulkhead; [, wherein the second shaft end is machined to form a spline to which]

a rotor [is] mounted to the spline;

portions [of a drive side] of the refiner housing forming [which define] a stock inlet through which stock is supplied to a shroud, the shroud defining a passageway between an outer conical shell, an inner cylindrical structure and a drive side stationery plate support structure, the inner cylindrical structure surrounding the bulkhead, and wherein the shroud is arranged to cause [causes] the stock to rotate and thus produce [producing] an acceleration directed radially outwardly of the cylindrical structure[,];

[the passageway terminating at] a baffle terminating the passageway defined by the shroud;[,] [thus causing the stock to pass through]

portions of the inner cylindrical structure forming a plurality of holes in the inner cylindrical structure between the stock inlet and the baffle; [to enter]

a reservoir formed on the inside of the [inside] cylindrical structure surrounding the shaft, the plurality of holes connecting the passageway to the reservoir [and wherein] so that stock flowing along the passageway between the outer conical shell and the inner cylindrical structure [circular path about which the stock is forced to flow] separates tramp metal and other heavy weight tramp [, throwing it radially outwardly against the outer conical shell, wherein the radial acceleration produced is not so great that it causes heavy weight tramp to travel upwardly along the conical shell into engagement